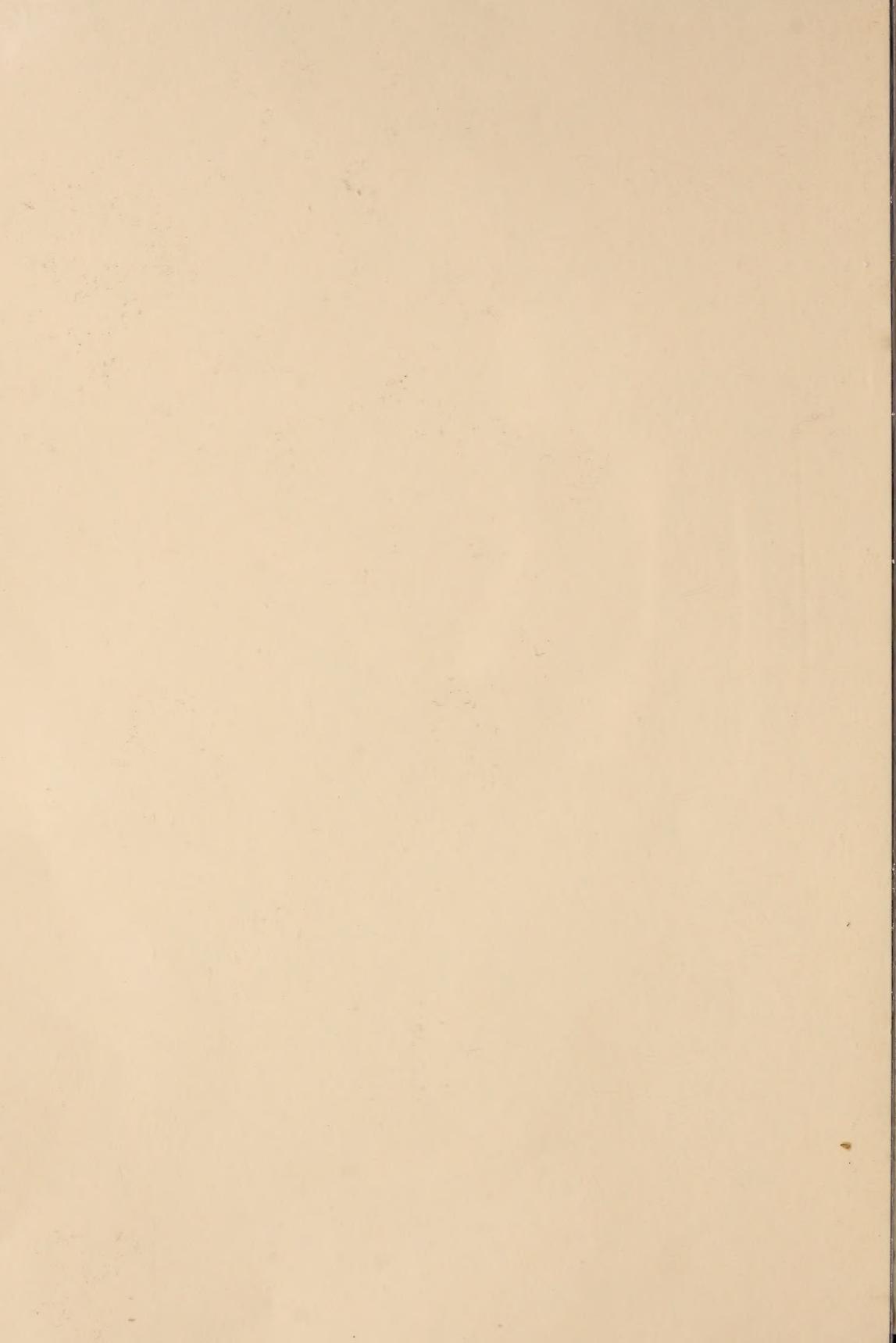


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Our 1904 Catalog of

Seeds of Honey-plants, etc.

Tools for Gardeners, Fruit-growers, etc.

NOTICE.—The gardening and vegetable-seed business conducted by us for so many years has been turned over to E. C. Green & Son, Medina, Ohio. As Mr. Green has been for many years connected with the Ohio Experiment Station he is authority on all matters pertaining to seed-growing, market-gardening, etc. He is prepared to furnish all the seeds we have handled heretofore, and will, I think, give equally close prices, while at the same time he will keep up the high standard of the seeds.

THE A. I. ROOT COMPANY.

I have for years had dreams of a honey-farm, with acres of flowers of different colors, blooming at different seasons, and keeping the bees away from the stores and groceries when we have a dry spell in the fall. The dream has been partially realized with the Simpson honey-plant, Molly O. Large's spider plant, and the seven-top turnip, but I am pretty well satisfied it will not pay to cultivate these for honey alone. Mignonette, catnip, motherwort, borage, melilot, and some others I have tested, but I am quite sure that none of them have ever paid, just for the honey.

We first give a list of the plants that not only yield honey, but are profitable crops for their other products. If the bee-keeper can not raise these himself, he can often induce farmers round about him to do the same by furnishing the seed free, or (where it is expensive) part of the price of the seed. As an illustration: We have for years been in the habit of furnishing buckwheat seed free of charge to any one who will sow it within a mile and a half of our apiary. Alsike, white Dutch clover, and Mammoth (or Peavine) and crimson clover, we furnish at half the usual price. Now, then, friends, which is the most important honey-bearing plant, generally speaking, in the world? I am inclined to think that basswood (or linden) bears the largest quantity of honey, although it is not generally considered quite equal to clover in flavor; for in the honey-markets it usually sells for one cent per pound less than clover. We, however, put basswood first and clover second.

Basswood-trees.

	Per 10	Per 100
One foot and under, each, -	.05	.30
The above by mail, " -	.08	.35
One to five feet,	.10	.75
		5 00

These will be taken directly from our nursery, and if planted any time after the leaves have fallen, until the first frost, or in early spring, will start fast to grow. They can also be sent during the months of March, April, and May; and spring planting is preferable. For a description of the basswood, with engraving see A. B. C. Basswoods may be planted along the roadsides so as to answer for shade-trees, and at the same time furnish honey. The bee-keeper can also usually arrange so as to get them planted for shade along the streets of towns and cities. We can furnish the basswood-seeds if desired; but as they require special treatment I think our friends will be much better satisfied to buy little trees.

SEEDS OF HONEY PLANTS.

The prices given below are only for prompt orders, for the market fluctuates so, on clover seeds especially, that we can not promise these prices to continue.

Basswood-seed. Oz. 5c; lb. 50c; by mail, 60c.

Alsike Clover. One ounce, by mail, 5 cts.; 1 lb., by mail, postpaid, 28 cts.; by express or freight, 1 lb., 18 cts.; one peck, \$2.50; $\frac{1}{2}$ bushel, \$4.75; bushel, \$9.00.

This furnishes not only the best honey of any plant in the world, letting the majority judge, but the quality of the plant for feed for cattle, whether hay or pasture, is probably better for milk-producing than any other forage-plant. It can be sown almost any time, but perhaps gives best results for seed, when sown in March or April. About 6 to 8 lbs. are required per acre, and it does not blossom much until the second year. Its treatment and cultivation are much the same as the common red clover, but the seed is saved from the first crop. We know our seed to be fresh, and free from dangerous seeds.

Medium Clover. Bushel, \$9.00; $\frac{1}{2}$ bush., \$4.75; peck, \$2.50; lb., 18c; lb. by mail 28c.

White Dutch Clover. Bushel, \$12.00; $\frac{1}{2}$ bu., 6.25; pk., \$3.25; 1 lb., 25c; lb. by mail, 35c.

This differs but little from the ordinary white clover. It has an advantage over alsike, inasmuch as it will scatter its seed without any cultivation, and it grows along the roadsides, pastures, and all waste places.

Peavine, or Mammoth Red Clover. Bushel, \$9.00; $\frac{1}{2}$ bu., \$4.75; pk., \$2.50; per lb., 18c; by mail, 25c per lb.

This yields honey late in the season, after all other clovers, and, in fact, after basswood; and in some localities it rarely fails to give more or less of a crop, especially where Italian bees are kept. In other localities there have been complaints made that the bees would not work on it.

Alfalfa, or Lucerne. Per bush., \$9.00; $\frac{1}{2}$ bush., \$4.75; peck, \$2.50; pound, 18 cts. By mail, 28 cts.

This is the great honey-plant of Arizona, Idaho, California, and other Western States and Territories. Here it is raised by irrigation in fields of a thousand acres or more, there is an almost continuous honey-flow, from spring until winter. It not only produces each season the most beautiful honey, not only by the ton, but by the carload. In Sept. 1892, we received from W. K. Ball, Reno, Nevada, a carload of the finest comb honey made from alfalfa, ever put on this or any other market. Little patches have, at least partially, succeeded in the Eastern States. In dry seasons it will succeed, without a doubt; but much rain is detrimental. On our grounds it stands winter without injury, and we have found the roots at a depth of several feet. We furnish purchasers a little circular in regard to its cultivation.

Crimson or Scarlet Clover. Two-bushel sack, \$8.75; per bushel, \$4.50; half-bushel, \$2.40; peck, \$1.25; pound, 10 cts. If wanted by mail, add 10 cts. per lb. extra for postage and packing. We will send 3 lbs. by mail, postpaid, for 50 cts. From 8 to 15 lbs. of seed are needed per acre.

It is a little singular that this plant, after having been in this list of seeds of honey-plants for upward of ten years, without eliciting very much attention, has, within a couple of years past, not only come up into great prominence as a honey-plant, but every body seems to take the lead among the clovers of any in common use. This is due to the fact that, when sown in the fall early enough to get well rooted, and yet not so early as to send up blossoms, it will stand average winters without injury, even as far north as Northern Ohio. It is equal to any clover for hay, and comes some earlier in the spring than any other. It is as valuable as red clover to plow under, and yet it may be sown among growing corn at the last cultivating, and be ready to plow under in time to put another corn crop on the same ground the very next year. It is cheaper than manure, on most farms; for a heavy growth plowed under has been called equivalent to ten tons per acre of the best stable manure. It also promises to be a boon to bee-keepers.

Sweet Clover (*Melilotus alba*, or *melilot*; also called *Bokhara*). 100 lbs., 8 cts. per lb.; 10 lbs. or more, 10c per lb.; 1 lb., 12c; 1 lb. by mail, 22c.

Sweet clover, hulls only, 7c per lb. additional. As there are a good many more seeds in a pound of this latter, it may be as cheap, even at this advanced price. Yellow sweet clover (with hulls on only) 7 cents per pound more than the white sweet clover.

This has some valuable traits, as standing frost and drought, and in some localities it is the main honey-plant. About four pounds of the hulled seed, or eight or ten lbs. with hulls on, are needed for an acre. It will grow on almost any barren hillside, but it is never a bad weed to exterminate. If it is mown down to prevent seeding, the roots will soon die out. Sow in spring or fall. In the vicinity of Salt Lake, Utah, sweet clover is the main honey-plant, and the quality of the honey is equal, in my opinion, to any honey in the world. The plant lives through the dry summers in Utah. See "leaflet" about sweet clover, mailed free on application.

The Hairy Winter or Sand Vetch (*Vicia villosa*). We have just succeeded in getting a very low rate on the

seed of the above plant, so we can furnish one bushel for \$6.00; $\frac{1}{2}$ bushel, \$3.25; peck, \$1.75; 1 quart, 25 cts.; pint, 15 cts.; $\frac{1}{2}$ pint, 8 cts. If wanted by mail, add 8 cts. per pint, or 15 cts. per quart extra for postage. I am very anxious that this new legume be tried extensively. I have never had any report from it in regard to its value for honey, but as it bears immense quantities of blossoms, something the shape of a locust-blossom, it must furnish large quantities of honey, and it begins to bloom just after fruit blossoms. We will send along with the seed full particulars, so far as we can learn, in regard to its cultivation.

Buckwheat, Japanese. Trial packet, 4 ounces, by mail, postpaid, 5c.; 1 lb. by mail, postpaid, 15c; peck, 35c; $\frac{1}{2}$ bush., 65c; bush., \$1.25; 2 bush., \$2.25. These prices include bag to ship it in.

We should place buckwheat at the head of the list were it not for the fact that it often fails, almost, if not quite, to yield honey; and the quality of the honey is always second class and the color is dark. At the present time the Japanese has so far outstripped all other varieties that we have dropped them entirely from our list. It makes a much stronger growth than the old kinds, gives a much larger yield, and is more resistant to insects and diseases. During the past season the yield has been so great as to put buckwheat flour as well as grain at a lower price than it has been known before for years. We have an 8 page pamphlet, being a collection of articles from different localities telling just how to raise buckwheat. Mailed for 5c., or given free to all purchasers of our seed. Please notice that buckwheat can not very well be sent ALONE BY ITSELF, either by mail, freight, or express, without the expense of shipment being more than the value. If you want a peck, or half a bushel, it should be ordered by freight with other goods, unless you are willing to pay more than the seed is worth, in the way of charges.

Dwarf Essex Rape. 1 lb., mail, postpaid, 20c; freight or express, 50 lbs., 6c per lb.; 100 lbs., \$5.00.

This plant has been rapidly coming to the front in the last few years as a forage plant, especially in Michigan and in the Great Lakes States. In May, June, July or August and at our Ohio Experiment Station it gave from 8 to 12 tons per acre in 90 days after planting. Like other new forage-plants, stock must be taught to eat it. It is a splendid thing to cut on after early potatoes. After the first cutting or eating off it will start again; and it is so hardy that it will grow until the ground is frozen several times giving feed even as late as the middle of December, in our locality. It possesses remarkable fattening qualities. An acre of it will feed over 30 sheep for a month. Directions for raising will be mailed free on application. This rape is not a honey-plant, unless allowed to winter over and go to seed. It has wintered over perfectly, and produced quite a crop of honey, as far north as Michigan. See leaflet, mailed on application.

Cow Peas. We have only the Wonderful and Early Blackeye. Price of Wonderful, 1 qt., 12c; by mail, 15c more; peck, 75c; $\frac{1}{2}$ bush., \$1.35; bushel, \$2.50. Extra-early Blackeye, $\frac{1}{2}$ more than above prices.

This latter will ripen seed almost anywhere in the North, but it does not produce anywhere near as large an amount of feed, either for stock or to turn under. Both kinds will, however, produce sufficient bloom to furnish considerable quantities of honey in favorable localities. Leaflet mailed on application.

Seven-top Turnip. Oz. 5c; lb. 20c; 10 lbs. \$1.50. If wanted by mail, 10c per lb. extra.

This plant, although not equal to the Spider plant and the Simpson honey-plant, is entitled to a place next to them, because it bears its crop of honey in the spring between fruit blossoms and clover. It should be sown in Aug. and Sept. It bears no root like the ordinary turnip, but only foliage that is used for greens. Excellent for plowing under.

Sunflower, Mammoth Russian. Oz. 5c; lb. by mail, 15c; 10 lbs. or over, by freight or express, 5c per lb.; 100 lbs., 4c per lb.

This plant is visited by the bees in great numbers in some localities, while in others it is scarcely noticed; but, as the seeds usually pay all expenses of cultivation, it holds its place as a honey-plant. The mammoth Russian bears by far the largest blossoms, as well as the largest seeds.

Soya Bean. Price, qt., 10c; pk., 60c; bush., \$2.00. About 1 bushel (60 lbs.) is needed per acre. For description see leaflet, mailed on application.

American Coffee-berry. Package, 5c. This is probably a variety of the soja beans. At first we were inclined to think from the appearance that it was the same; but on making it into coffee we had to admit that the coffee-berry is something different, and much more like genuine coffee. If I were going to use coffee at all I should prefer this to the real thing—principally, however, because it is nourishing instead of being stimulating. Besides, the coffee-berry matures very much earlier than the soja bean. In order that you may all try the coffee for yourselves we offer it at the following low prices: $\frac{1}{2}$ pint, 7c; pint, 10c; quart, 15c; peck, 75c; bushel, \$2.50. If wanted by mail, add 15c per quart extra for postage and packing.

The above are the only plants I know of that can be profitably grown by the bee-keeper; that is, the honey they yield would probably pay, in connection with the profit on the plant for other purposes.

Plants for Honey Only.

The following plants yield honey, and many of them in considerable quantities; but they are so little used for other purposes that there is little inducement to raise them by the acre; and let us bear in mind that it must take acres of any plant to yield honey enough to amount to anything.

Borage. Oz. 10c; lb. \$1.40; if wanted by mail, add 10c per lb. extra.

A strong, hardy, rapidly growing plant, bearing a profusion of blue flowers. It may be sown any time, but will, perhaps, succeed best, at about corn-planting time. As it grows tall, and branches out considerably, it should have plenty of room. I know that bees are very busy on it, all the day long; from July until Nov., but I do not know how much honey an acre of it would furnish. It is easily tried, because it grows so readily, and if sown on the ground after early potatoes are dug, you will get a nice crop of fall bloom. Sow broadcast, or in hills like corn. Borage is also used as a salad, or cooked as spinach.

Catnip. Oz. 10c; lb. \$1. If wanted by mail, add 10c per lb. extra.

This has been very much talked about, and we have record of some experiments with an acre or more; but, if I am correct, only a few have ever yet seen a barrel of catnip honey. Sow in the fall.

Dandelions. Package 5c; oz. 50c.

I presume everybody can get dandelion seeds and roots without buying them, but for all that, I have much faith in an acre of cultivated dandelions. French thick-leaved is superior for "greens," and by the way our bees take to our "patch" of it, I think it must be superior for honey.

Motherwort. Prices same as for catnip.

Pigwort, or Simpson Honey-plant. Oz. 20c; lb. \$2. By mail, 10c per lb. extra, for postage.

This is a queer tall weed that grows in fields and woods and bears little cups full of honey. It bears honey all the day long, and is good to eat, though hardly pleasant to taste. It grows tall, and after that shoots up from the root every year, but needs planting anew about every three years. The seed sometimes lies in the ground many months before germinating. If sprinkled on the top of damp leaf-mold, packed hard in a box, and rolled hard, being kept dark and damp in a warm place, they will sprout in a week or two. Then give all the light and air possible, but not too much water.

Mignonette. Oz. 10c; lb. \$1; by mail, add 10c per lb.

This is a great favorite with the bees, and also with those who are raising plants for their bees; but although we have sold considerable of the seed for bee pasture, I am not sure that any one has ever made it pay in dollars and cents, for the honey alone.

Mustard. Common (either brown or black). Oz. 5c; lb. 15c; 10 lbs. \$1.00. Add 10c per lb., by mail.

The honey from this is said to be very light, equal to any in flavor, and to command the highest price in the market.

Spider Plant. (*Cleome pungens*.) Package 5c; oz. 20c; lb. \$2. Postage 10c per lb. extra.

This plant, under favorable circumstances, yields more honey than any thing that even bees can under my observation. In Oct. 1879, one plant yielded drops of honey that a bee had to make two or more journeys to get it all, and I succeeded in dipping the honey from the plant with a spoon, until I half filled a bottle with it, for experiment. As it yields only this honey early in the morning, and late in the evening, it will go nicely with the Simpson honey-plant. I should think it quite probable that 5 acres of each of these plants would keep 100 colonies busy enough to be out of mischief during a dry fall, when bees are so apt to be robbing. For particulars concerning both plants, see A B C of Bee Culture. The Spider plant is an annual, and should be sown every year. It grows almost too fast with hotbed treatment, but will blossom in August if sown in the open ground in May.

Portulaca. 5c per package.

Best mixed. A bed of portulaca, say a rod square, will show more bees in the working season, for the area, than any other plant I know of; furthermore, a bed of mixed portulacas, equivalent to a square rod, makes one of the handsomest, if not the handsomest of sights, when in full bloom, the whole floral kingdom affords. It does not seem to me that any plant could afford to be without bed; and I might also say, no lover of flowers can well afford to forego the gorgeous spectacle of a bed of mixed portulacas, especially when the seed is only 5 cents a paper. One paper will cover a square rod of ground nicely. You can have the square rod laid out in artistic beds and walks, if you choose.

Rocky Mountain Bee-plant. (*Cleome integrifolia*). Oz. 15c; lb. \$1.25, postage 10c extra.

This is closely connected with the noted Spider plant (*C. pungens*), these two being the only species of the Cleome. With us, it is much inferior to the Spider plant as a honey-producer. We have reports from some localities of its yielding large quantities of honey, hence quite a demand for the seed is the result.

Sage, White (*Salvia argentea*).

Both white and black sage in 5-cent packages only.

Is called the honey-plant of California, and belongs to the Labiate or Mint family, the same as Rosemary, Balm, Hoarhound etc.

Corulea, Bee Clover. Oz. 10c; lb. 75c; by mail, add 10c for bag and postage.

This latter blossoms in about six weeks after sowing, and bears a small blue flower.

Chapman Honey-plant. Packet 5c; oz. 20c.

The large globular blossoms exude pure honey, and if enclosed in a paper bag so the bees are kept away the blossoms will become quite sticky with the honey.

Any of the above seeds will be sent in 5c packages, to those who would like just a few to try.

Sweet Peas. While these may not be a honey-plant, bees sometimes work on them quite freely; and it is hard to imagine a prettier sight near your mignonette-bed than a collection of sweet-peas on a trellis of poultry-netting, with the bees busy on the blossoms.

We can furnish a choice mixture of the best kinds at 5c per ounce: 10c per 1/4 lb.; 30c per lb. If ordered by mail, add 9c per lb. for postage.

Thermometers and Barometers for Greenhouse Men, Gardeners, Farmers, Dairymen, Poultry-keepers, etc.

We can furnish a very pretty and accurate thermometer for all general purposes, plain scale, easy to read, for only 15 cts.; by mail, 20 cts. A very reliable dairy thermometer, all glass, so that it can be immersed in any liquid without rusting. Price 15 cts.; by mail, 20 cts. Also a very substantial incubator thermometer. This has a scale that runs only from 60 to 120. In this way we get a long scale with the marks so far apart it is an easy matter to get down to a very accurate temperature; or in other words you can get the temperature to a very exact point if you wish. These are made specially for poultry-men, are very accurate and easy to read. If I am correct, it is about the best thing for the purpose. Price 25 cts.; by mail, 35 cts.

Barometers for Foretelling the Weather.

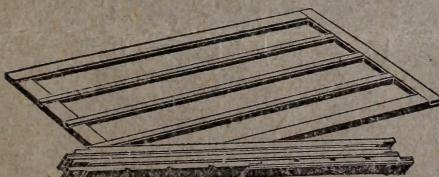
I have said several times before that our barometer frequently saves the expense of it in a single day. In fact, I consult it almost as often as I do my watch, and plan my work accordingly, and very seldom make a mistake. It is especially valuable to the gardener in warning him against heavy blows of wind. When he goes to bed at night, if there is likely to be a blow before morning it may save him a good many dollars by having his sashes, greenhouses, and other fixtures prepared accordingly. We can furnish a very pretty good-sized aneroid barometer for \$3.50. Although they can be sent by mail, we recommend by express only, as they are liable to injury from throwing the mail-bags. Postage, 20c extra.

Putty-bulb and Insect-powder Gun.

For setting glass for greenhouses, for repairing sash, etc. This is a rubber bulb, with nozzle, for running liquid putty along where the glass lies in the sash. No person who has half a dozen sash should be without one. Full instructions for preparing the putty, with each. With a little different arrangement the above makes the neatest kind of powder-gun for using a small quantity of pyrethrum, or insect powder. In ordering, please state which purpose you wish it for. Price 20c; post. 5c.

Cold-Frame or Hot-Bed Sash.

Made of Cypress.



The sash are of the regular size, 3 ft. 2 1/2 inches by 6 ft., for four rows of glass 8 inches wide. If any prefer larger glass we will furnish sash for 3 rows of 11-inch glass at the same price.

These sash are usually shipped from here knocked down at a low rate of freight, and they can be put together by anybody. If done securely they are just as strong as the regular sash. They are 1 1/2 inches thick, outside bars about 2 1/2 inches wide, and inside ones about 1 1/4. The bars are grooved to slip the glass in place. If light of glass is broken, move them up close and slide another in from the bottom end.

Price of one sash, in the flat, for sample, without glass, 80 cts.; 5 in the flat, 75 cts. each; 10 in the flat, 70 cts. each. Glass, 8x10, just right for the above, \$2.70 per box of 90 lights; 5 boxes, \$2.60; 10 boxes, \$2.50.

Sash put up, no glass or paint, 10 cts. each extra; 10 cts. each extra for each coat of paint, and \$1.15 each extra for glass set in place, making the sash put up, painted two coats, and filled with glass, at \$2.10 each in lots of 5. The risk and freight charges are so much more shipped put up with glass that we do not recommend you to order this way, and we can not well pack less than 5 safely.

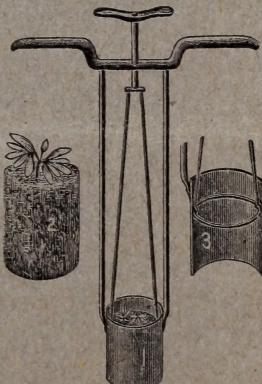
We would not advise shipping a less number than five; but if you take our advice you will have all your glass sash shipped in the flat. In this case they go as fourth-class freight; whereas, all complete they will have to go as first-class, and some roads rate them as double first-class.

Boxes for Starting Squashes, Melons, Cucumbers, etc.



During my visit to Arlington, in July, 1886, I noticed that the squash-growers had a plan for getting Boston marrow squashes on the market very early. It is by means of the boxes shown in the adjoining cut. These, as you notice, are made so as to nest one in the other, occupying but little room when stored away, or drawn out on the wagon. An 8x10 glass slides in the top. These boxes can be used for putting over hills of early potatoes in March and April; and when the potatoes are out of danger the boxes will do good service in forwarding squashes, melons, and cucumbers. After all danger of frost is past, the glass may be drawn out, but the box is left on, as a protection against bugs. If the bugs are very bad, however, you will have to tack on cheese-cloth. The striped bug will crawl through mosquito bar. As the glass is to move loosely, it is not a very long job to slide them all back when the weather is mild, and close them up again at night, when frost comes. If the earth is banked around the lower edges, it makes quite a miniature cold-frame. I was astonished while at Arlington to see squash-vines fully a month ahead of the usual time; but I was told these boxes were the explanation of it. Don't fail to have a big lot of good manure under each box (see our little book, "Gregory on Squashes"). Prices of these little boxes without glass, in the flat, 15 cts. each; \$1.25 for 10, \$10.00 per 100. Glass to match, \$2.70 per box of 50 square feet. There are about 90 lights in a box.

A New Transplanting-Machine.



The cut will make the machine plain, almost without any particular explanation. You hold the machine in both hands, and with an auger-like motion back and forth you set the steel tube, No. 1, over the plant. It is pressed down till it will bring up the plant, roots, and all, in a lump of dirt like No. 2. It is not advisable to push it any further down than is necessary to get all the roots. In fact, if the tap-root is broken off, with most plants they will do just as well.

After the plant is out of the ground in its ball of earth, you place your two thumbs on the lever at the top of the machine, and push down, releasing the all of dirt. With strawberries you can load these balls

into a wheelbarrow, or with appropriate trays you can load them into a wagon. Fit your ground nicely, as described in our book on strawberry culture. Mark it out according to your notion, then with the transplanting machine make holes to drop your "potted plants" into, for they really are potted plants, to all intents and purposes.

Permit me to say that I have used very faithfully all the strawberry planting implements made on this plan, and I would put this machine far ahead of any of them in point of speed of working, and for effectiveness. Where you are going to put out a considerable area, say a quarter of an acre or more, especially if two hands are at work, two machines are very handy. Price of the machine, \$1.25; two machines, \$2.25.

1904



The Faultless Sprayer.

Certain Death to all Insects. Keeps the Flies off Horses and Cattle. Kills Potato-bugs, Currant Worms, and Lice on Stock and Poultry.

Few little inventions make the stir and do the amount of good that the little tin spray-pumps did that were introduced in 1898. Although we have a machine for spraying potatoes that cost \$25.00, we let it stand in the tool-house, and spray a great many acres of potatoes with the little spray-pump like the one pictured here. It does the work easier and cheaper and better. A boy with some packages of Paris green (a large spoonful in each paper) in his pocket, and in his hand a spray-pump weighing only a pound will do the whole job in a very little time; in fact, one boy takes his hoe along and does the hoeing and spraying both, without any machine to lug back and forth, nor any chance of said machine getting out of order. As soon as we began to offer them for sale others seemed to discover their advantages; and although we ordered pumps from the factory at several different times, we were sold out in spite of us when we wanted them most. We sold over 1700 during one season.

These pumps are so perfect that the spray looks like steam out of the nose of a teakettle; in fact, you can fill the air in a room with vapor with one of these machines. The price for 1904 is only 27 cts., or 3 for 75c; the same with galvanized iron tank, 35 cts. You can have the same thing made all of brass for only 55 cents. Either kind can be mailed for 25 cts. additional. Now do not say you can not afford a sprayer to keep the potato-bugs out of sight, for the great advantage of this little apparatus is that it is so little work to use it you can kill the bugs when they first start, and keep them down before your potatoes are injured at all. Thousands of people lose their potatoes every season just because it is too much work to fight the bugs.

With every machine is a stout linen tag, with full directions how to use the sprayer for all kinds of insects. Yes, this machine will answer for fruit-trees all right, but you would have to get up on a high stool, or climb a ladder, to get the spray all over a tree of any size. For spraying orchards a larger and more expensive machine is needed. For keeping flies off horses and cattle use pure kerosene in the above sprayer.

ANOTHER USE FOR THE FAULTLESS SPRAY-PUMPS.

The following was clipped from *Gleanings*:

You ask for information regarding the use of kerosene spray on cattle, to keep off flies. Last year, seeing on sale at one of our stores the Acme sprayer (similar to the Faultless), and thinking it would be handy for me to spray my hand-fertilized potatoes, I bought one and found it very convenient for that purpose. By keeping it loaded I could go over my few short rows every morning to make sure the bugs would not destroy the buds or blossoms before the seed-balls were set. Of course, for this I used Paris green. I also used the sprayer with clear kerosene oil for spraying cabbage, with good results. One day, noticing that the flies were tormenting my calves, I thought to try the kerosene spray on them. I found it worked charmingly, as no flies would remain on the calves to annoy them, after which we sprayed them every morning.

The men, noticing the good effect of the spray on the calves, tried it on the cows just before milking, with equally good results. I found it would last all day on the calves if one-fourth sweet or lard oil was added to the kerosene. I am using the sprayer with clear kerosene on my orchard, to kill the oyster-shell bark-lice that are now hatching. This year I shall buy a sprayer for each kind of mixture to avoid the trouble of so many changes. They are so cheap one can afford to have all he wants.

Bristol, Vt., Apr. 5, 1900. A. E. MANUM.

Insecticides.

Paris Green.

Paris green is such unpleasant stuff to handle that we prefer to sell it only in original packages. These are put up securely, and may be shipped without injury, as follows: 4-oz. packages, 7 cts. each; $\frac{1}{2}$ -lb. packages 12 cts. each; 1-lb. tin cans, 22 cts.:

cans holding either 2 or 5 lbs., 20 cts. per lb.; 14 lbs. at 19 cts.; 28 lbs., $18\frac{1}{2}$ cts.; 56 lbs., $17\frac{1}{2}$ cts., and 100 lbs. at 17 cts. per lb.

Tobacco-Dust.

This is sprinkled over the foliage, and on the ground around lettuce in the greenhouse or on melon or other vines just as they are coming up, and is one of the best and cheapest insecticides known. one lb., by mail, 20c; 5 lbs., by express or freight, 3c per lb.; 10 lbs., $2\frac{1}{2}$ c per lb.; 25 lbs., 2c per lb.: 100 lbs., \$1.50.

Pyrethrum Cinerariaefolium.

(Persian Insect-Powder.)

This is not only a pretty plant for the flower garden, but the flowers, gathered and dried when in full bloom, and then finely powdered, furnish us the Persian insect-powder, of which so much has been said. With us it has been the surest thing to kill all sorts of small insects (slaying them out dead in even a few minutes), of any thing we have ever got hold of. It will also kill the green fly in greenhouses. When used in the insect-powder bellows, described below, but very little of the powder is required.

With the powder-gun (see "putty-bulb" on page 3), you can kill every fly in any room of the house, within an hour. Of course, the doors and windows of the room should all be closed. In painting new houses in the summer time, when flies are troublesome, the instrument is worth more than it costs, for this alone. It is not at all poisonous or injurious to human beings.

Price of the powder, all ready for use, one ounce, 5 cts.; $\frac{1}{4}$ lb., 10 cts.; 1 lb., 35 cts.; 10 lbs., \$3.00.

THE A. I. ROOT CO., Medina, Ohio.